Argonne NATIONAL LABORATORY

News

MON JUNE 18 2007

VOLUME 60, NO. 12

World's first X-ray free electron laser is on course to completion

SYLVIA CARSON

ARGONNE reached another milestone in the design and construction of the Linac Coherent Light Source (LCLS) undulator system.

LCLS will be the world's first X-ray free electron laser when it becomes operational at the Stanford Linear Accelerator Center (SLAC) in 2009. It will be the first X-ray laser to combine the brilliance of laser sources with the penetrating power and atomic sensitivity of X-rays. Argonne is a partner laboratory on the project and is responsible for the 130-meter undulator system, including magnets, support structures, beam diagnostics, controls and vacuum systems.

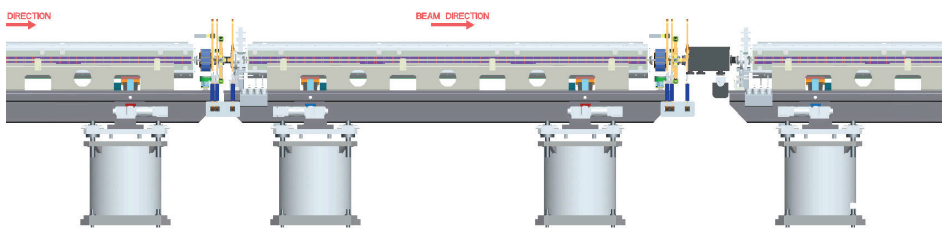
"Argonne was tapped to participate in this project due to the expertise demonstrated with the Advanced Photon Source (APS) undulator systems," said J. Murray Gibson, associate laboratory director of Argonne's Scientific User Facilities. "An X-ray laser such as LCLS will open up new scientific frontiers and represents an immense technical achievement for the United States," he added. "We could not have done this without the partnership of national laboratories, universities and industry."

"The last of the 40 LCLS undulators was assembled and accepted by Argonne late last month, on time and within budget, from Hi-Tech Manufacturing in Illinois and Metalex Manufacturing in Ohio," said Argonne LCLS Project Director Geoff Pile. "The LCLS project remains on course for completion in March 2009."

"This is the first time such ultra-precise undulators were mass-produced in America by non-specialized small businesses," said Emil Trakhtenberg, Argonne senior mechanical engineer at APS.

Undulators are the heart of the LCLS free electron laser, providing a precise magnetic field through which the electron beam travels. Electrons are forced to oscillate back and forth as they traverse the undulator, causing them to produce large amounts of X-rays. These X-rays interact back on the electrons and force them to bunch at X-ray wavelengths. When this occurs, the electrons emit their light coherently and a large gain in radiation power is experienced, raising the X-rays' intensity.

Each undulator comprises a precision-tuned array of ultra-strong neodymium-iron-boron permanent magnets and vanadium permendur magnetic poles. The magnets and poles are mounted in aluminum structures bolted into a 3.4-meter-long titanium strongback. The strongback secures the magnet and pole assemblies, counteracts the very high magnetic forces between the upper and lower magnetic arrays, and is critical in determining the thermal and mechanical stability of the undulator. Precision and stability requirements for the LCLS devices far exceed those for existing undulators at the Advanced Photon Source and other light-source facilities.



(TOP) The last of the forty Linac Coherent Light Source undulators were assembled and accepted by Argonne late last month, on time and within budget, from Hi-Tech Manufacturing in Illinois and Metalex Manufacturing in Ohio. From left to right are Argonne's Geoff Pile, Marion White, Joe Ingraffia, Stephen Milton, Fran Coose, Tom Barsz, Glen Lawrence and Emil Trakhtenberg. Hi-Tech personnel, in the white uniforms are Gregory Goldfarb and Simon Sorsher. Not shown: Argonne's Isaac Vasserman and Shigemi Sasaki.

An engineering drawing of a section of the finished undulator, which will be 130 meters long.

The pulses of X-ray laser light from LCLS, a fourth-generation light-source, will be shorter and a billion times brighter than can be produced by any other X-ray source available now or in the near future.

"These advanced characteristics will aid scientists in discovering and probing new states of matter, understanding and following chemical reactions and biological processes in real time, imaging chemical and structural properties of materials on the nanoscale, and many new and exciting discoveries we cannot even imagine today," said Marion White, senior physicist at APS. "The LCLS will enable revolutionary new science."

The LCLS project is funded by the U.S. Department of Energy and is being constructed by a partnership of three national laboratories: SLAC, Argonne and Lawrence Livermore National Laboratory. ■

Dynamic networks topic of director's special colloquium

Carley

"MANAGING and Disrupting Dynamic Networks" will be the topic of an upcoming Director's Special Colloquium to be held Friday, June 22.

The speaker will be Kathleen Carley, a professor of computer science at Carnegie Mellon University. As director of the Center for Computational Analysis of Social and Organizational Systems, Carley led a team that produced three large-scale models of disaster and crisis situations.

Her talk at Argonne will center on Dynamic Network Analysis, an emerging field aimed at understanding simultaneous movement on various network dimensions in a meta-network. She will discuss an approach assessing these meta-networks, from the raw texts that provide information to computational forecasts of how these networks might evolve. Carley will briefly describe three key methodologies — AutoMap for network based text-mining, ORA for network assessment, and Construct, a multi-agent model for exploring network evolution.

Carley is also the founding editor of Computational and Mathematical Organization Theory and the founding president of the North American Association for Computational, Social and Organizational Science.

The colloquium will begin at 10 a.m. in the Building 402 Conference Center. All employees whose schedules permit are welcome to attend. ■

Distinguished, outstanding employees to be honored

THE UChicago Argonne, LLC Board of Governors for Argonne will honor 20 employees and two children of employees at its 2007 Awards Program Thursday, June 28.

The program will begin at 2 p.m. in Argonne's Building 402 Auditorium, and a reception will follow. All university, Argonne and U.S. Department of Energy employees whose schedules permit are invited to attend.

Distinguished Performance Awards recognize outstanding scientific or technical achievements, or a distinguished record of achievement of select Argonne employees. Honorees are Michael Borland (ASD), K. Ernst Rehm (PHY), Michael Q. Wang, Center for Transportation Research, and Linda Young (CHM).

- Michael Borland has been involved in software development for accelerator design, simulation, commissioning and operation for nearly 20 years, with 15 of those years spent at the Advanced Photon Source (APS). In that time, his code "Elegant" has become a standard tool for those working on next-generation light source development. The Self-Describing Data Sets (SDDS) Concept Borland originated has greatly facilitated both simulation development and creation of specific complex simulations, including comprehensive multi-code simulations that bridge the gap between accelerator physics and X-ray generation. In addition, SDDS forms an essential part of the APS control system where, together with other software developed by Borland and his team, it helps to deliver on the promise predicted by the simulations. Borland's work in the development and implementation of computer software for accelerator research is recognized internationally and represents groundbreaking achievements in the field of the computational accelerator physics.
- Experimental physicist Ernst Rehm has done pioneering work in both nuclear astrophysics and reaction studies. He has established a major new thrust in experimental physics at the Argonne Tandem Linac Accelerator System (ATLAS), addressing the processes that form the chemical elements in hot stars and produce energy in stars and our sun. Rehm has led an experimental program that has brought Argonne to the fore in nuclear astrophysics experiments. Over

(See "Employees Honored" on page 2")

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Employees Honored

(Continued from page 1)

the last 10 years, Rehm has developed a method based on the ATLAS accelerator in which exotic nuclei are produced as secondary beams, and then manipulated to have the well-defined energies that are required for the measurements. This method has been successfully applied to several of the key questions in this area; results obtained represent an important contribution to this field of science. The techniques also have led to new research opportunities at ATLAS beyond astrophysical applications in nuclear structure and reaction dynamics, and are being widely copied elsewhere. Rehm's pioneering work has set the stage for the development of the Argonne concept for a next-generation exotic beam facility.

- Over the past 15 years, Michael Wang has developed the most widely respected and broadly used transportation energy emissions lifecycle model in the world. The GREET (Greenhouse gases, Regulated Emissions, and Energy use in Transportation) model allows users to readily evaluate and compare the energy and environmental benefits of advanced vehicle technologies and new transportation fuels. Wang's expertise and his use of the GREET model have had a dramatic and positive impact on both the public and private sectors in the recent high-profile debate on corn-based ethanol. The model has become the "gold standard" for well-to-wheel analyses of vehicle-fuel systems. Wang's rigorous methodology, uncompromising integrity and attention to detail have made him the world's most sought-after expert on transportation fuels pathways. Because of his work, Argonne is viewed as the source for the most definitive data on total energy cycle analysis in the transportation sector.
- Linda Young has been a leading member of the atomic physics community for the last 15 years and has emerged as a leader in the international field of synchrotron radiation. She has become widely recognized for her techniques ranging from laser spectroscopy to atom trapping and beam manipulation to the development of ultra-sensitive and accurate methods of determining lifetimes, isotope abundances and cross sections. Young's career at Argonne has covered several subfields of physics, including X-ray interactions with atoms and molecules, ultrasensitive detection techniques using atom traps, precision measurements of atomic structure and the development of optically pumped sources of polarized hydrogen and deuterium. These research topics were carefully chosen opportunities, based upon resources unique to Argonne, where atomic physics could play a critical, sometimes breakthrough, role to synergistically enhance other fields of science — such as nuclear physics, studies of fundamental symmetries and geochronology. As group leader of the Atomic, Molecular, and Optical Physics group in the Chemistry Division, she has guided her group to an outstanding record of accomplishments.

Outstanding service

Outstanding Service Awards, the highest honor the UChicago Argonne, LLC gives to Argonne employees in support positions, will be awarded to Dick Konecny (HEP), Joyce Leggett (EQO), Rick Putnam (AES) and Cindy Wilkinson (C&PA).

- Dick Konecny is honored for his invaluable contributions to the Argonne Wakefield Accelerator group of the High Energy Physics Division. His contributions to the research program are broad and encompass the design, fabrication and assembly of electron beam diagnostics, beamline vacuum components and a wide variety of electronics circuits. Konecny plays a fundamental role not only in the research program carried out at Argonne, but also in the collaborative projects pursued by the group at other institutions. He is involved in the design, fabrication and installation of prototype Wakefield accelerating structures at the Naval Research Laboratory in Washington, D.C., the Stanford Linear Accelerator Center in California and recent projects at Los Alamos National Laboratory in New Mexico. As he approaches his 45th year of service at Argonne, Konecny has been an indispensable part of the laboratory and the High Energy Physics Division through his considerable contributions, generosity to team members, openness to new technologies, hard work and dedication.
- Joyce Leggett has made numerous and significant contributions to nuclear energy research and development, nuclear and accelerator operational safety, and the maintenance of comprehensive laboratory environment, safety and health (ES&H) records over her 46 years of employment at Argonne. The reliability of the laboratory's nuclear, accelerator, external and independent assessments, investigations and other ES&H records that Leggett maintains is legendary. During the transition of Argonne-West to the Idaho National Laboratory, the nuclear records maintained by Leggett over the years were pivotal in assuring transfer of an important base of knowledge. For many years, Leggett provided support to the laboratory director's numerous safety committees. She continues to serve the laboratory's Accelerator Safety Committee and provides assistance to the newly formed Nuclear Operations Division.
- Rick Putnam started his employment at Argonne 43 years ago as a technician with the Zero Gradient Synchrotron, where he developed an expertise in magnets that included inflow, hydrostatic and electrical testing, along with potting coils. Many of the vacuum impregnation of epoxy procedures used on coils for magnets were developed and perfected at the Zero Gradient Synchrotron with Putnam's input, and are still used today at other facilities. When IPNS was in its early stages, he built magnets using the same techniques, and his input was used on all the electronic instrumentation and interlocks used for operation of the ALEX and FELIX magnets. After joining the APS magnet group in 1989, he developed and managed a quality control system that his team used for all electrical, hydrostatic and flow tests on more than 2,000 magnets. These magnets have been operating for 13 years with little trouble, helping to maintain beam reliability at 95 percent and better. Putnam has earned the respect of everyone who works with him. His knowledge and experience continue to have a positive impact on the APS.
- Cindy Wilkinson's efforts at Argonne over the past 29 years have contributed greatly to the laboratory's positive relationship with its surrounding communities. She has managed Argonne's open houses for years with tremendous success. Most recently, she oversaw the 2006 open house celebrating Argonne's 60th Anniversary, coordinating the activities of more than 100 Argonne volunteers in planning, organizing and implementing the event. Approximately 20,000 people attended this event and learned about Argonne's research and community service activities. She also managed Argonne's presence at the Illinois State Fair on three separate occasions. Wilkinson was the Argonne lead coordinator for President George Bush's visit to Argonne in 2002 – the first and only presidential visit in the laboratory's history. With one week's notice, Wilkinson organized Argonne participants, prepared and staged locations for the presidential visit, coordinated efforts with DOE, the Secret Service and the president's advance team, and managed displays and presentations from Argonne and other national laboratory scientists who met with the president during his visit. Wilkinson also led the successful organization of the Community Leaders Round Table, which has been repeatedly cited by DOE as the most commendable community effort in the DOE system.

New award

The University of Chicago has added a new award to its program this year, the Pinnacle of Education Award, the first of which will be awarded to Marion C. Thurnauer of Argonne's Chemistry Division. This award was created to recognize an individual for leadership in science through the Argonne Division of Educational Programs.

Thurnauer is an inspirational leader not only in chemistry and photosynthesis, but also through her promotion of diversity at the laboratory through educational programs. Thurnauer founded the Science Careers in Search of Women conference and was instrumental in the formation of Women in Science and Technology, which she chaired for more than four years. She has been a mentor to many young scientists on both a formal and informal level. She was on the nominating committee for the Maria Goeppert Mayer Scholar program and numerous other Argonne advisory committees. This past year, the laboratory hosted the 20th Science Careers in Search of Women Conference. Argonne was awarded a Department of Energy Diversity Award in 2006 for the conference, which has influenced the future of nearly 10,000 young women over the past two decades.

Each Distinguished Performance, Outstanding Service and the Pinnacle of Education Award winner will be presented with an award and a check for $3,500.

Scholarships

University of Chicago undergraduate scholarships will be awarded to:

- Vuk Brajuskovic, a graduate of Naperville North High School and son of Bransilav Brajuskovic (APS) and Tijana Rajh (CHM and CNM).
- Ekaterina Koshelev, daughter of Alexei Koshelev (MSD) and Irina Koshelev of the university's Center for Advanced Radiation Sources at Argonne. Ekaterina is a graduate of Neuqua Valley High School in Naperville.

The scholarship covers the students' first year of undergraduate tuition and is automatically renewed for the following three years, as long as the recipient remains a full-time student in good academic standing.

Contract contributions

Lastly, the university will recognize several Argonne employees for their contributions to the proposal effort that succeeded in securing the award of the management contract for Argonne by the U.S. Department of Energy to the university's company, UChicago Argonne, LLC. ■

Green Piece

Conservation can start with reducing use of disposables

THIS is the first in a regular series of articles about actions Argonne employees can take at work and at home to help sustain the environment.

Being "green" can start simply by changing a basic habit or considering the environmental impact of everyday actions. For example, try to avoid using disposable, single-use items. Every year in the United States, 25 billion Styrofoam cups are thrown away, 114 million aluminum and plastic beverage containers are wasted, 111 billion plastic bags are wasted, and 27 million trees are cut down to produce paper towels.

All of these items are manufactured using petroleum products and take up valuable landfill space. As an alternative to single-use items, try using a thermos or mug for hot drinks and a refillable bottle for water. Carry a cloth bag in the car or bike to use for groceries. Lastly, keep reusable towels handy, and don't use a whole handful of paper towels to clean up a small spill.

According to the Kansas Department of Health and Environment, recycling one ton of paper can conserve 17 trees, 463 gallons of oil, 3.06 cubic yards of landfill space and 4,077 kilowatts of energy, and eliminate 587 pounds of air pollution.

More information about how to sustain the environment is available online.

"Green Piece" is provided by Gregg Kulma, Argonne's Pollution Prevention Program coordinator. Contact him with questions, comments or suggestions at ext. 2-9147. ■

www.epa.gov/epaoswer/osw/index.htm
www.greenchoices.org

Argonne NATIONAL LABORATORY

Argonne News is published bi-weekly for Argonne employees by Communications and Public Affairs. ■ Send news items to Editor Dave Jacqué, Building 201, Room 261 (C&PA-201). Voice: ext. 2-5582. Fax: ext. 2-5274. E-mail: *info@anl.gov*. ■

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Biofuel carbon credits are focus of joint work with FCStone Carbon, LLC

ARGONNE and FCStone Carbon, LLC, a subsidiary of major commodity risk management firm FCStone Group, Inc., will work together to quantify biofuel carbon credit reductions and trading in the marketplace.

Argonne acts as a certified third party agency, quantifying how many carbon credits a facility can offer by using its total energy cycle software model, GREET (Greenhouse gases, Regulated Emissions and Energy use in Transportation). First released in 1996 and sponsored by the U.S. Department of Energy's Office of Energy and Renewable Energy (EERE), the GREET model currently serves more than 4,000 users.

"Argonne is probably the most credible entity in the industry for establishing methodologies and protocols on carbon credits for greenhouse gas emissions," said Dick Lindgren, president of FCStone Carbon. "As Argonne implements this technology into the biofuels industry, credibility will rise and the green energy market will expand." FCStone Carbon, LLC has assumed funding of this project for the next three years.

"This is a great opportunity for Argonne to bring its research examining carbon reductions of various technologies into the carbon trading market by working with FCStone Carbon LLC," said Michael Wang, project manager at Argonne and developer of GREET. "It is exciting to see research results driving business practices that will help reduce pollution."

Last year more than $28 billion in carbon credits was traded worldwide. "As protocols and methodologies are established in the biofuel industry," said Lindgren, "biofuel plants and facilities will have the opportunity to contribute many new carbon credits to this burgeoning market."

The United States does not currently adhere to the Kyoto Protocols, which set quotas for the European Climate Exchange. But an increasing number of cities, states and regions in the United States have initiated carbon credit registrations and exchanges on a voluntary basis. "Our opinion is that a national cap and trade system will be initiated," said Lindgren. "We expect that by 2010 we should see a lot more direction from a legislative or regulatory standpoint."

Advances such as the GREET model are helping to standardize the carbon credit trade in the United States. The GREET model was initially developed to assist in reducing the nation's dependence on oil, lowering greenhouse gas emissions and urban air pollutants, and boosting energy efficiency.

FCStone Group, Inc., along with its affiliates, is an integrated commodity risk management company providing risk management consulting and transaction execution services to commercial commodity intermediaries, end-users and producers. The firm assists primarily middle market customers in optimizing their profit margins and mitigating exposure to commodity price risk. In addition to risk management consulting services, FCStone, LLC operates one of the leading independent clearing and execution platforms for exchange-traded futures and options contracts. FCStone Carbon, LLC has been created to participate in the development of markets for carbon and emission credits. FCStone Group, Inc., serves more than 7,500 customers. ■

The partnership of FCStone Carbon, LLC, and Argonne will make it possible for more untilled land, like this, to generate carbon emission credits. (Photo: FCStone Group, Inc.)

Argonne scientist wins first-ever Young Scientist Prize for Atomic, Molecular and Optical Physics

Santra

ROBIN Santra (CHM) has been selected as the winner of the first 2007 International Union of Pure and Applied Physics (IUPAP) Young Scientist Prize for Atomic, Molecular and Optical Physics.

Santra is an assistant physicist in Argonne's Chemistry Division. Since his arrival in August 2005, he has collaborated on the discovery, using an X-ray microprobe, of a hole-orbital alignment in atomic ions generated in the focus of a strong laser field. He has also contributed to 12 scientific papers and been published in Physical Review Letters on five different occasions. Most recently, his theoretical work has uncovered electromagnetically induced transparency for X-rays, suggesting a simple switch to produce ultrafast X-rays.

He is currently investigating other ways of influencing X-ray absorption with strong lasers and is also interested in nonlinear X-ray science with free electron lasers.

Linda Young, Argonne Distinguished Fellow, nominated Santra and considers his contributions to atomic, molecular and optical physics to be particularly noteworthy for research with next generation light sources, where an understanding of fundamental light-matter interactions at high intensity and short wavelength is essential. "Robin is a rare theorist who can make intimate contact with experiment, producing predictions and insight that actually guide science in a productive fashion," she said. "He is truly deserving of the award and will bring distinction to it for years to come."

The IUPAP is a global organization of physicists whose mission is to assist in the worldwide development of physics, to foster international cooperation in physics and to help in its application toward solving problems of concern to humanity.

The prize consists of a medal, a citation and a check and will be awarded to Santra during the International Conference on Photonic, Electronic and Atomic Collisions in Freiburg, Germany July 25-31. ■

Office of the Director employee receives SPOT award

ANDREA CIPRIANI

Soto

ALICIA Soto (OTD) was presented with the SPOT Award for her quick actions after noticing a potential safety issue.

Soto was leaving for the day from Building 201 when she heard a large branch break off a tall tree and tumble to the ground. She immediately called the building manager who roped off the area and initiated the clean-up process. Because of Soto's quick action, the situation was completely taken care of before any employees arrived the next morning and all safety hazards were eliminated. Soto's actions showed a strong sense of initiative and safety responsibility for all employees.

The SPOT Award recognizes employees' contribution to safety and quality at the laboratory. Nominations for SPOT awards can be sent directly to EQO Director Bob McCook at *mccook@anl.gov*. ■

Prizes drawing rewards contributors to health and welfare campaign

OVER the past 11 years, the Argonne Combined Appeal (ACA) Steering Committee has raised more than $4.5 million for local health and welfare agencies. Employees' contributions have provided food for the hungry, shelter for the homeless, sanctuary for battered women and children, education and training for those seeking a better life, living assistance for the physically challenged, treatment for the ill and research toward cures.

The ACA thanked everyone who contributed to this year's campaign by holding a prize drawing. Prizes and winners were:

- Gong Ho Restaurant $25 gift certificate — Donna Cardia (OCF)
- Elegante Salon and Day Spa $25 gift certificate — Tracy Schikora (OCF)
- Emmett's Tavern & Brewing Co. $25 gift certificate — Nancy Erdmann (TSD)
- Cozzi Corner Hot Dog & Beef $30 gift certificate — Sandy Buckley (EQO)
- Tasso's Porterhouse Steaks and Seafood $20 gift certificate — Carol Wesolowski (TSD)
- White Fence Farm complimentary certificates — Bryan Schmidt (TSD)
- Public Landing Restaurant $25 gift certificate — Armando Esquivel (FMS)
- Public Landing Restaurant $25 gift certificate — Enos Baker (EQO)
- Connie's Pizza $25 gift certificate — Brian J. Zook (FMS)
- Kerry Piper Irish Pub $25 gift certificate — Theodore Bauer (NE)

The final numbers from the campaign will be available to all employees in the next few months. ■

CHORAL GROUP SEEKS NEW MEMBERS FOR EARLY FALL CONCERT

The Argonne Choral Group — now planning year-round performances — is looking for new members.

"We could especially use a few more women sopranos and altos," said director Katie Weber. "Of course, we could always use more men as well." The group welcomes singers of any type, talent or ability.

Rehearsals are held Mondays and Thursdays from 11:45 a.m. to 12:30 p.m. in the Building 362 Auditorium. For more information, contact Pat Garner, president of the Argonne Choral Group, at *plgarner@anl.gov*.

CIRCUMNAVIGATE ARGONNE AT MAGELLAN RUN

The Argonne Running Club will sponsor the Magellan Run Thursday, June 28. The run and walk will begin at 5:45 p.m. and finish at 7:15 p.m. at Waterfall Glen Trailhead, located at Cass Avenue and Northgate Road.

All Argonne employees and their guests are welcome to participate in the 9.6-mile trek along the forest preserve's main loop trail. Drinks will be provided at the three- and six-mile marks and refreshments will be provided at the finish. There will be a drawing for two $50 gift certificates to Dick Pond Athletics.

Maps and ideas for other routes will be available for those who do not want to complete the entire route. For more information, contact Jim Kuiper (EA) at ext. 2-6206.
www.argonneclub.anl.gov/ARC

SERVICE AWARDS FOR JUNE 2007

40 YEARS
Janet Anderson (AES), Clarence Clark (AES), Kenneth Dritz (DIS)

35 YEARS
Patricia Moonier (OPS), George Vasilopulos (ASD), James Woodring (EQO)

30 YEARS
Joan Brunsvold (OCF), Diana Hurst (CIS), Edgar Morris (NE), Kenneth Sidorowicz (AES)

25 YEARS
Ahmed Hassanein (MCS), Vanessa Mendez (OTT)

20 YEARS
Juan Campuzano (MSD), Angela McKay (CPA), Gary Pilon (FMS), Deborah Vervack (CHM), Richard Vondrasek (PHY), Charles Zimmerman (CIS)

15 YEARS
Deborah Busch (LEG), Stephen Butala (EQO), Bruce Herdt (NE), Mary Hoff (OCF), John Hoyt (AES), Jeffery McGhee (EQO), Mark Sreniawski (EQO), Raymond Ziegler (PNS)

10 YEARS
Sandra Bittner (CIS), Lisa Childers (MCS), Joan Christensen (OCF), John-Paul Navarro (MCS), Carol Warczak (MCS)

5 YEARS
Jay Benning (FMS), Laurie Eichberger (MSD), Edward Frank (MCS), Christiaan Zaluzec (CIS)

U.S., France explore nanoscience partnerships

The France-U.S. Nanoscience Workshop focused on ways the two nations could collaborate in nanoscience. Participants were selected from across the U.S. Department of Energy laboratory system and the French Centre National de la Recherche Scientifique and Commissariat à l'Énergie Atomique complexes. *Photo by George Joch.*

A group of 50 researchers and invited participants came together at Argonne June 3-5 for the "France-U.S. Nanoscience Workshop" aimed at stimulating collaborations in nanoscience.

The U.S. Department of Energy's Pat Dehmer, associate director for the Office of Science, Basic Energy Sciences, attended, along with Technical and International Advisor Linda Blevins. The workshop focused on international collaboration and cooperation for solving critical issues in nanoscience and nanotechnology, especially issues of energy and information technology. In yet another demonstration that international partnerships have always been important for the success of DOE laboratory-based research, participants from many of the DOE national laboratories were present. U.S. participants were chosen to balance diverse scientific interests and representation across the national laboratory complex and affiliated universities. Participation of French scientists was across their Centre National de la Recherche Scientifique (CNRS) and Commissariat à l'Énergie Atomique (CEA) complexes, including sites in Grenoble, Lille, Marseille, Paris, Rouen, Saclay and Troyes.

Organizers for the French were Jean-Philippe Bourgoin, director of nanoscience programs for CEA at Saclay, and Didier Stievenard, deputy director of the CNRS Institute of Electronics, Microelectronics, and Nanotechnology in Lille. Eric Isaacs, Argonne's director of the Center for Nanoscale Materials (CNM), with Stephen Streiffer and Kathleen Carrado-Gregar of the CNM, coordinated organization for the United States. Involvement was divided equally between the two countries.

Technical and breakout sessions focused on the areas of electronic and magnetic properties, novel nanomaterials and devices for energy, structural and dynamic properties at the nanoscale, coherent control of electrons, spins and photons and nanoscale structure and imaging. ■

REACTOR LEAGUE'S 1ST ACE

Dean Bass (CMT) of the Argonne Reactor Golf League celebrates a hole-in-one with a hot fudge sundae in the Gleneagles Clubhouse. Bass scored the ace during league play May 17. Current members think it may be the first hole in one in the history of the league, which was founded in 1958. It's the first hole-in-one for Bass, who has been golfing for 35 years.

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Argonne Firefighters participate cook-off for charity

ANDREA CIPRIANI

ARGONNE Fire Chief Gordon Veerman and Batallion Chief Dave Bamonti entered two of their signature recipes in the Sertoma Centre's Big Event Cook-off at the Tinley Park Convention Center.

Thirteen different firehouses from throughout Chicago and the suburbs participated in the Big Event. Bamonti's entry was the "That's Italian" beef sandwich, while Veerman entered his "Chicken in the Bean Field" stew. After the event, the firemen took time to visit with program participants of Sertoma Centre.

"I want to thank Argonne Laboratory for being so supportive of the efforts of Argonne Firefighters Gordon Veerman and Dave Bamonti in participating in Sertoma Centre's Big Event Cook-off," said Lora Cummings, Public Relations Specialist from the Sertoma Centre. "The event would not be possible if it were not for the selflessness of firefighters like Gordon and Dave, and the support from their employers."

Sertoma Centre, a non-profit agency, is a nationally accredited social service agency that provides job training, placement and residential services to more than 650 individuals from Chicago and the south suburbs. This was the fourth year for the "Big Event" fundraiser, which helps fund the 13 different programs the Centre operates. ■

Argonne Fire Chief Gordon Veerman with Sertoma Centre participant John Steindel.

"CHICKEN IN THE BEAN FIELD STEW"

1 medium onion, chopped
4 carrots, chopped
3 stalks celery, chopped
2 tablespoons sugar
2 chicken bouillon cubes
1 lb. thick bacon fried crispy, broken into pieces
Pepper
1 lb. cut-up chicken breast, partially cooked
1 16 oz. can refried beans
2 16 oz. cans chicken broth
1 16 oz. can black beans
1 16 oz. can Great Northern beans
1 16 oz. can Cannellini white kidney beans
1 16 oz. can dark red kidney beans
1 15-16 oz. can light red kidney beans
1 16 oz. can butter beans
1 16 oz. can pinto beans
1 16 oz. can chick peas
1 15-16 oz. can black eyed peas
1 15-16 oz. can garbanzo beans
1 15-16 oz. can diced tomatoes
1 7 oz. can chopped spinach

Put all canned ingredients in crock pot and cook until carrots and celery are done.

Classified Ads

MISCELLANEOUS

TOOL KIT — 42-piece, fitted case, never used. $10. Bert Toppel, (630) 355-3323.

MISCELLANEOUS — Couch, beige, very good condition. $100. Nordic Track skier, very good condition. $50. Medium wood tone desk, never used, excellent condition. $25. 3-drawer dresser, dark tone, good condition. $20. Pam Styka, (630) 986-1970.

PRAIRIE DIRT — As much as you want. $5. Jill Jonkouski, (773) 586-1664.

MISCELLANEOUS — Electric lawn mower, cordless, plug in to recharge. Quiet, environmentally friendly, low maintenance. $75. Toro 6.5 lawn mower, used two seasons but hard to start (i.e., needs work), $50. Sturdy 28-foot extension ladder. $50. Motorcycle seat: original from '06 Suzuki Boulevard S50 (Intruder). $25. Particle board: 4X6X3/4", free to good home if you pick up. Dave Jacqué, (630) 373-5408 or *djacque@wideopenwest.com*.

LAWNMOWER — Ariens, riding, 8hp, 28" cutting path, electric start. $325. Roxanne Purucker, (815) 469-3658.

POOL FILTER — Missile Element, 1.5hp, 2-speed motor, brand new, cartridge used 1 month, excellent condition. $200. Linda DeVito, (630) 918-4979.

MISCELLANEOUS — Infant changing table/dresser, light tone wood. $25. Punching bag, fill with water. $20. Cathy Eyberger, (630) 968-1154.

BOAT — 15', AlumaCraft, trailer, 25hp Evinrude, 24# trolling motor, 3 seats, fishing platform, anchors, lights, bilge, many accessories. $1,900. Neil MacDonald, (708) 460-9607.

MISCELLANEOUS — Oak dining table, 4 chairs. $650. Oak coffee table, end tables. $125. Maple/leather chair. $50. Lemond Rev Master Cycle, wireless cadence meter, polar heart monitor. $900. AmSec key lock, combination gun safe. $275. Wade Cureton, (815) 546-5724.

LINKSYS — Wireless G, PCI adapter. $20. Diane Ansah, (630) 435-0371.

GAMES — Computer, Gameboy, call for complete list. $7-$10. Fran Perri, (815) 439-1671.

BOAT — 2003 Bayliner Classic 195BR, trailer, Bimini canvas top, CD/MP3 player, single 135G Mercury/Mercruiser engine. $13,500. Vic Omiecinski, (708) 638-8760.

LAWNMOWER — 22", push. $40. Paul Vanderwall, (815) 838-2716.

MISCELLANEOUS — Linksys wireless, 3 port router. $25. Scotts Accugreen 1000 "drop" type spreader. $10. Bose Quiet Comfort 2 noise cancelling headphones, case, almost new. Jim Podraza, (708) 212-5250.

MISCELLANEOUS — Oak headboard, light, mirror, 2-side hutches with drawers, $100. D. Schoening, (815) 838-6176.

WASH MACHINE — Haier, 6.6 lb, .91 cu. ft., portable top load, barely used, excellent condition. $160. Xuemei Cheng, (630) 428-4518.

AQUARIUM — 55 gallon, stand, lid, light, filter, heater, gravel, no leaks, fair condition. $25. Robert Aeschlimann, (630) 416-8749.

MISCELLANEOUS — New antique-finished twin head/foot board. Originally $250, asking $175. New antique white glass-top table. Originally $200, asking $160. Mattress frame. $45. Tree stand for 17' tree. Originally $100, asking $60. Mark Petri, (630) 553-5009.

AUTOMOBILES

1994 CHRYSLER — Concorde, 174K miles, runs great, new timing belt. $1,500. Sergey Sharamentov, (630) 985-3316.

1998 DODGE — Grand Caravan, dark green, A/C, cruise, CD, PW, PL, 4 captain chairs, 120K+ miles. $3,850. Lynne Brooks, (630) 385-2417.

1995 PLYMOUTH — Voyager, 114K miles, good condition. $1,600. Binod Giri, (630) 271-9473.

HOUSING

APARTMENT/SHARE — 2 miles from lab. $350 mo. plus utilities. Gang Li, (630) 261-5130.

TOWNHOUSE/SALE — Bolingbrook, 3/4 bedroom, 3 levels, 2.5 bath, newly renovated. $173,000. Harry Tong, (630) 607-2225.

COTTAGE/RENT — Lake Michigan near Saugatuck, 5 bedroom, sleeps 12, 3.5 bath, fireplaces, modern kitchen, deck, beach, pool, no smoking. $3,000 week. Derrick Mancini, (708) 442-1323.

ROOM/RENT — 5 miles from lab. Tony Levand, (847) 622-8240.

CONDO/SALE — Tinley Park, 2 bedroom, 2 bath, fireplace, cathedral ceilings, garage and parking spot. $163,900. Jim Podraza, (708) 212-5250.

WANTED

SCOOTER/MOPED — 49CC. Kevin Quigley, (708) 636-2645.

BIKE — City bike in good riding condition for around two months, pay up to $75 depending on bike. C.N. Ganesh, (540) 353-2718.

CHILDREN'S CHAPTER BOOKS — Magic Tree House, Babysitter's Club, Trixie Belden, Nancy Drew, etc., call with asking price. Diane Ansah, (630) 435-0371.

GAS RANGE — LP, electronic ignition. Gregg Kulma, (630) 810-0270.